



Section C:1

Nuclear Material Stabilization

PROJECT MANAGERS

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SUMMARY

The Nuclear Material Stabilization (NMS) mission consists of the Plutonium Finishing Plant (PFP), WBS 1.4.5 (PBS TP05).

NOTE: the Safety, Conduct of Operations, and Cost/Schedule data contained herein is as of February 28, 2001. Other information is updated as noted.

Fiscal-year-to-date milestone performance (EA, DOE-HQ, and RL) shows that one milestone (100 percent) was completed ahead of schedule. Although eight additional milestones are scheduled for completion later this fiscal year, no milestones were scheduled for completion during this report period. Further details can be found in the milestone exception report following the cost and schedule variance analysis.

NOTABLE ACCOMPLISHMENTS

Maintain Safe & Secure SNM

Utilizing material supplied by the PFP, Phase one of the Defense Treaty Reduction Agency for Nondestructive Assay (NDA) measurement of high grade oxide materials was completed by PNNL. The result of this effort establishes a fingerprint of various oxide materials that will be used to develop NDA measurement technologies for ultimate use in Russia.

Maintain Safe and Compliant PFP

Installation of the final of twelve (12) backflow preventers is scheduled for completion in late March. This milestone activity remains significantly ahead of schedule to the June 2001 RL completion date.

Stabilization of Nuclear Material

Residues

Packaging of Rocky Flats (RF) ash into Pipe Overpack Containers (POCs) was completed on March 19, 2001. Final shipment of the packaged ash to the Central Waste Complex (CWC) is currently scheduled for April 3, 2001, well in advance of the April 30, 2001 milestone. Increased production rates from process improvements implemented during the RF campaign are expected to benefit subsequent processing of plutonium/aluminum (Pu/Al) alloys and Hanford Ash.

Oxides/Metals

Initiated planned graveyard shift metal processing operations on February 26, 2001 to compensate for higher than planned oxidation rates, operational difficulties with the Bagless Transfer System and late completion of the nuclear material inventory. Fifty-one metal buttons were brushed and packaged into a bagless transfer can. Two more that had previously ignited upon opening and were completely oxidized were packaged in food pack cans and returned to vault storage. A total of 177 have been brushed or oxidized out of a planned 257 to date.

Solutions

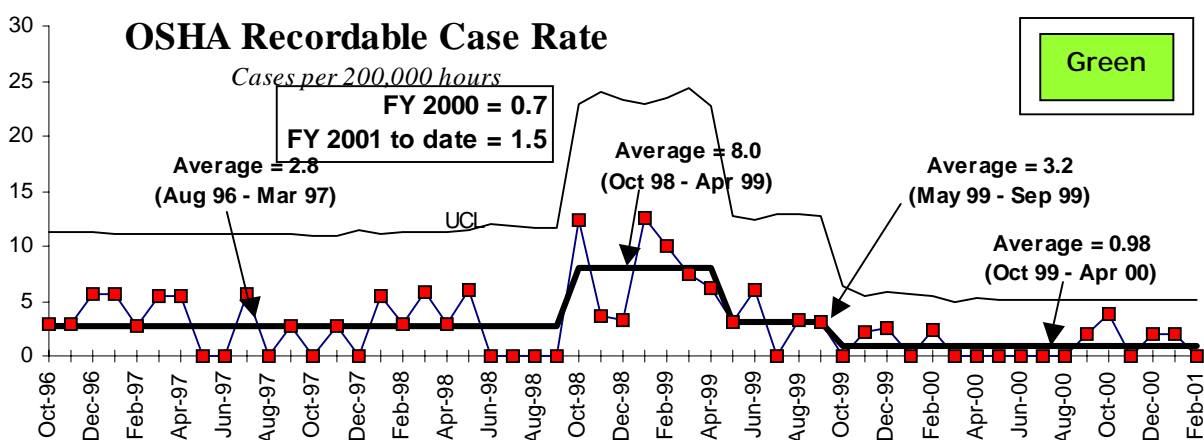
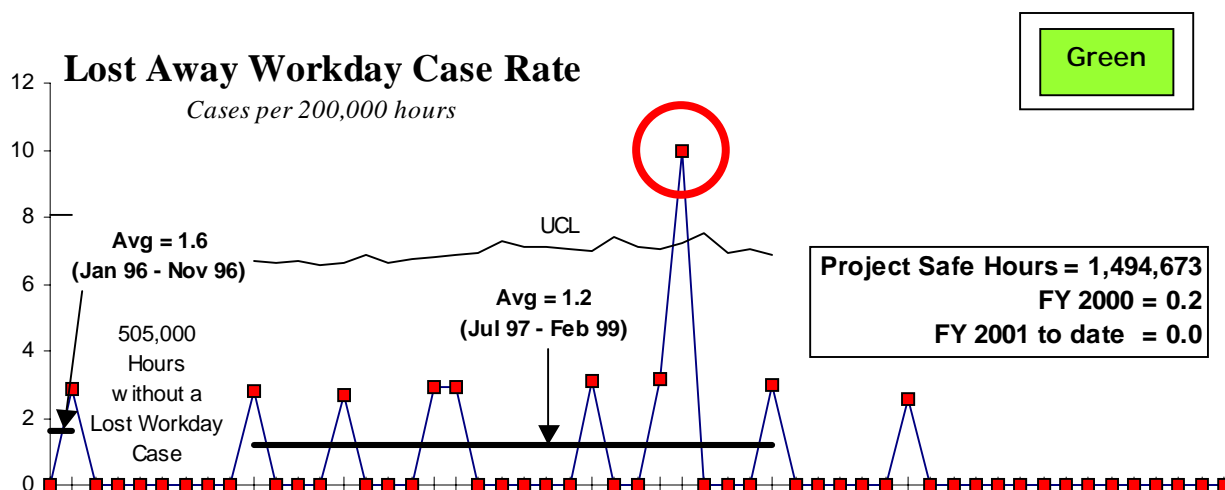
A total of 37 liters were processed during February bringing the fiscal year total to 296 liters, vs. a planned 654 liters.

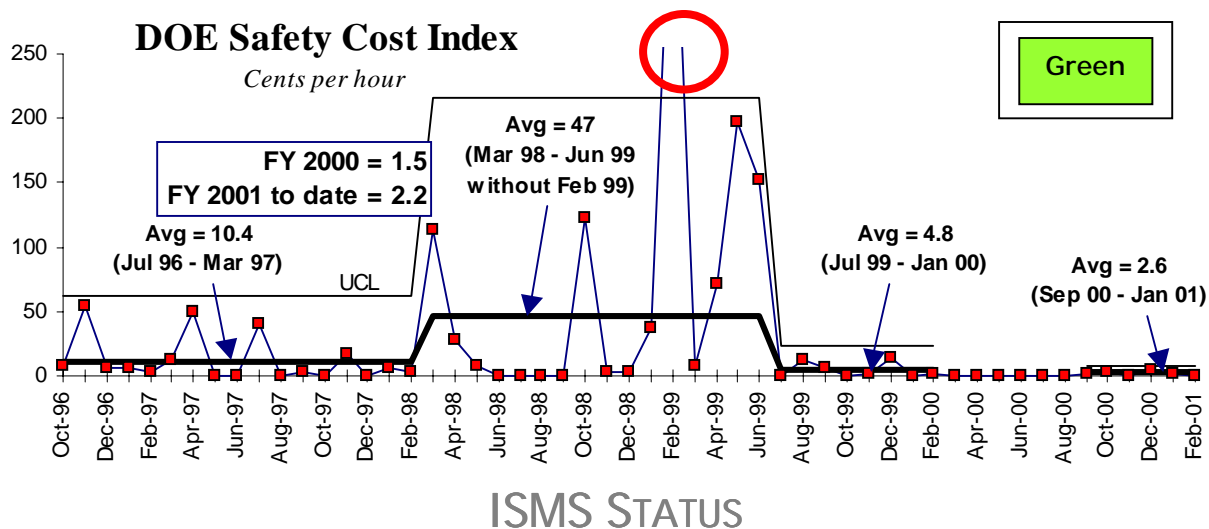
Disposition of Nuclear Material

The Acceptance Test Procedure (ATP) for the 2736-ZB Bagless Transfer System (BTS) has been completed and delivered to the PFP from the Savannah River Site (SRS). Reliability testing of the 2736-ZB Outer Can Welder (OCW) and operator training was completed in mid-February at the SRS. The OCW was subsequently delivered to the PFP on March 2. The FY 2001 FHI Nuclear Materials Inventory Assessment (NMIA) report was completed and submitted to RL. The re-bid of the remaining Project W-460 construction effort and a re-sequencing of workscope logic is expected to accelerate completion of this line item project by up to 1.5 years and result in a notable cost savings.

SAFETY

Through March 8, 2001, there were 463 calendar days (nearly 1.5 million staff hours) since the last recorded lost workday injury.

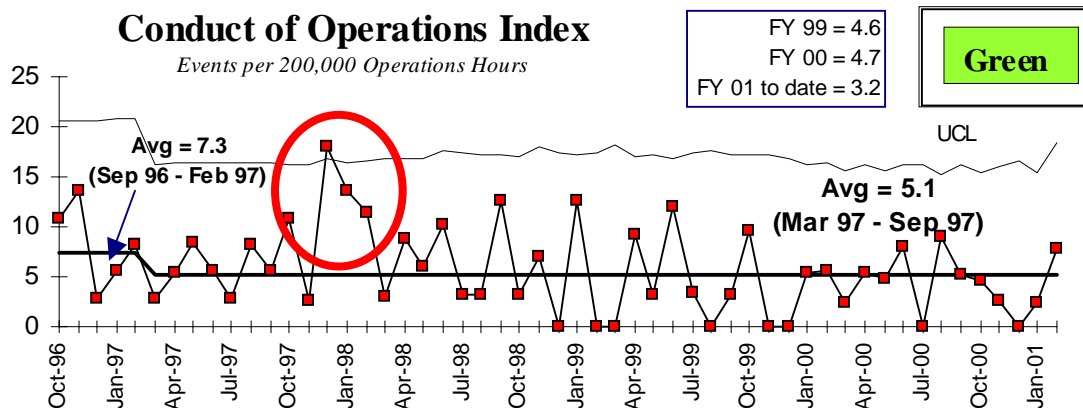




- Radiological Control continues to identify areas where dose can be reduced. Lead shielding has been installed to reduce background doses in Thermal Stabilization.
- Safety-focused meetings continue with the emphasis remaining on team involvement. The weekly PFP "Z-News" publication identifies safety articles submitted by plant personnel which address Industrial Safety, Radiological Safety, and Conduct of Operations are shared at the beginning of each meeting.

CONDUCT OF OPERATIONS

The Conduct of Operations Index has been stable for the past 3 years at a baseline of 5.1. The current baseline is less than the PHMC baseline of 5.6.



BREAKTHROUGHS / OPPORTUNITIES FOR IMPROVEMENT

Breakthroughs

None.

Opportunities for Improvement

Green

Residues Stabilization:

A risk-based evaluation is being initiated on the use of the 85-gallon overpacks for shipment of the Pipe Overpack Containers (POC). The goal is to eliminate the requirement thus reducing the shipment preparation time, elimination of the hazard of lifting the POCs into and out of the overpacks and reducing dose by reducing shipment preparation time. This proposal is expected to significantly reduce Residue Stabilization life cycle cost.

Exposure Reduction:

Completed an ALARA evaluation and cost benefit analysis for dose reduction alternatives for the stabilization of the polycube inventory. A shielded can will be used for material transport from the vaults into the glove box system, and shielded tongs will be used for handling the polycubes once the cans have been opened.

A request has been submitted to DOE-RL to conduct the DOE-RL Material Balance Area 280 domestic inventory in conjunction with the annual International Atomic Energy Agency (IAEA) inventory rather than at six-month intervals.

Solutions Stabilization – The Solutions Team continued its evaluation of alternate disposition methods for a portion of the Solutions inventory was completed. Solutions management has identified, and requested RL concurrence for, disposition of low gram plutonium nitrate solutions. If approved, this modification will accelerate the solutions stabilization project and reduce processing, packaging, and storage costs.

Maintain Safe and Compliant PFP - An ALARA evaluation and cost benefit analysis for dose reduction alternatives for the stabilization of the polycube inventory. A shielded can will be used for material transport from the vaults into the glove box system, and shielded tongs will be used for handling the polycubes once the cans have been opened. *[No further status to be provided.]*

UPCOMING ACTIVITIES

- Complete modifications to one vault cubicle by April 2, 2001. (Milestone TRP-99-412)
- Complete repackaging and shipping of Rocky Flats ash to the Central Waste Complex (CWC) by April 30, 2001.
- Complete stabilization of Pu alloys by June 30, 2001.
- Complete repackaging of Pu metal inventory in 3013 inner cans by March 31, 2001, and outer cans by August 31, 2001.

Green

MILESTONE ACHIEVEMENT

M I L E S T O N E T Y P E	FISCAL YEAR-TO-DATE				REMAINING SCHEDULED			TOTAL FY 2001
	Completed Early	Completed On Schedule	Completed Late	Overdue	Forecast Early	Forecast On Schedule	Forecast Late	
Enforceable Agreement	0	0	0	0	0	2	0	2
DOE-HQ	0	0	0	0	0	1	1	2
RL	1	0	0	0	0	4	0	5
Total Project	1	0	0	0	0	7	1	9

Only TPA/EA milestones and all FY2001 overdue and forecast late milestones are addressed in this report. Milestones overdue are deleted from the Milestone Exception Report once they are completed. The following chart summarizes the FY2001 TPA/EA milestone achievement and a Milestone Exception Report follows. The last milestone table summarizes the first six months of FY 2002 TPA/EA milestones.

FY2001 Tri-Party Agreement / EA Milestones			
M-083-07 (TRP-01-515)	"Complete Repackaging & Shipping of Rocky Flats Ash to the CWC"	Due April 30, 2001 – Packaging of RF ash into POCs was completed on March 19, 2001. Final shipment of the packaged ash to the CWC, which completes this milestone, is currently scheduled for April 3, 2001, well in advance of the April 30, 2001 milestone.	Green
M-083-08 (TRP-01-516)	"Complete Requirements to Ship Rocky Flats Ash to WIPP"	TBD –FPF transition negotiations are scheduled to begin June 1, 2001. A date for this milestone will be determined during transition negotiations.	Green
DNFSB Commitments			
M-IP-114 (TRP-01-501) R94-01	"Ship Alloys to SRS or Complete Stabilization of Alloys"	Due June 30, 2001 - Completion of metal alloy Stabilization processing is expected to meet the June 30, 2001 commitment. A Baseline Change Request (FSP-2001-024) to reclassify the remaining portion of the alloys into two groups of residues has been submitted to RL for approval. Group 1 alloys will be dispositioned this fiscal year through the pipe overpack process and shipped to the CWC for final shipment to WIPP to meet the June 30, 2001 milestone.. Residues Group 2 alloys will require further characterization before disposition and will be reclassified as residues <30% weight Pu and tracked to completion under the DNFSB Recommendation 2001 Residues milestone.	Green
M-IP-110 (TRP-02-500)	"Complete Packaging of Metal Inventory"	Due August 31, 2001 – This milestone was revised in the DOE Defense Nuclear Facilities Safety Board (DNFSB) Implementation Plan to reflect the staggered due dates based on current receipt and start up of the OCW. The current status is slightly behind schedule, but expected to recover.	Green

MILESTONE EXCEPTION REPORT

<u>Number/WBS</u>	<u>Level</u>	<u>Milestone Title</u>	<u>Baseline Date</u>	<u>Forecast Date</u>
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Overdue – 0

Forecast late – 1

TRP-02-500	HQ	Complete Packaging of Metal Inventory	03/31/2001	08/30/2001
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1.4.5

Cause: This milestone has been revised to August 31, 2001 in the DOE DNFSB Recommendation 2000-1 Implementation Plan to reflect the staggered due dates based on current receipt and startup of the Outer Can Welder (OCW). A baseline Change Request (BCR) is in process to reflect this change.

Impact: This DNFSB Recommendation 2000-1 milestone has been revised to August 31, 2001.

Corrective Action: No corrective action required. This activity is on schedule to complete on or before August 31, 2001.

FY 2002 Tri-Party Agreement / EA Milestones

Number	Milestone Title	Status
	Nothing to report at this time.	

DNFSB Commitments

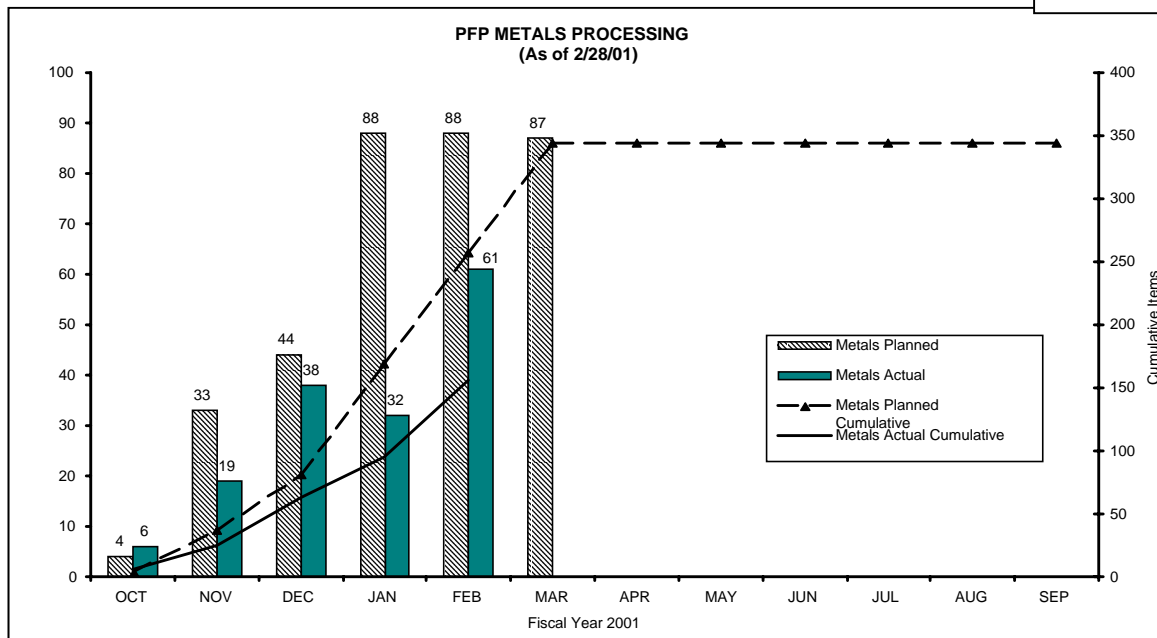
R94-01 (TRP-01-500)	"Complete Stabilization & Packaging Plutonium Solutions"	<p>Due December 31, 2001 – Currently forecast to be 3 months behind schedule.</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Yellow</p> </div>
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PERFORMANCE OBJECTIVES

The following chart portrays a more aggressive plan than the new performance incentives; consequently, stabilization progress is behind schedule to this plan and therefore statused "yellow".

OXIDES/METALS/POLYCUBES STABILIZATION

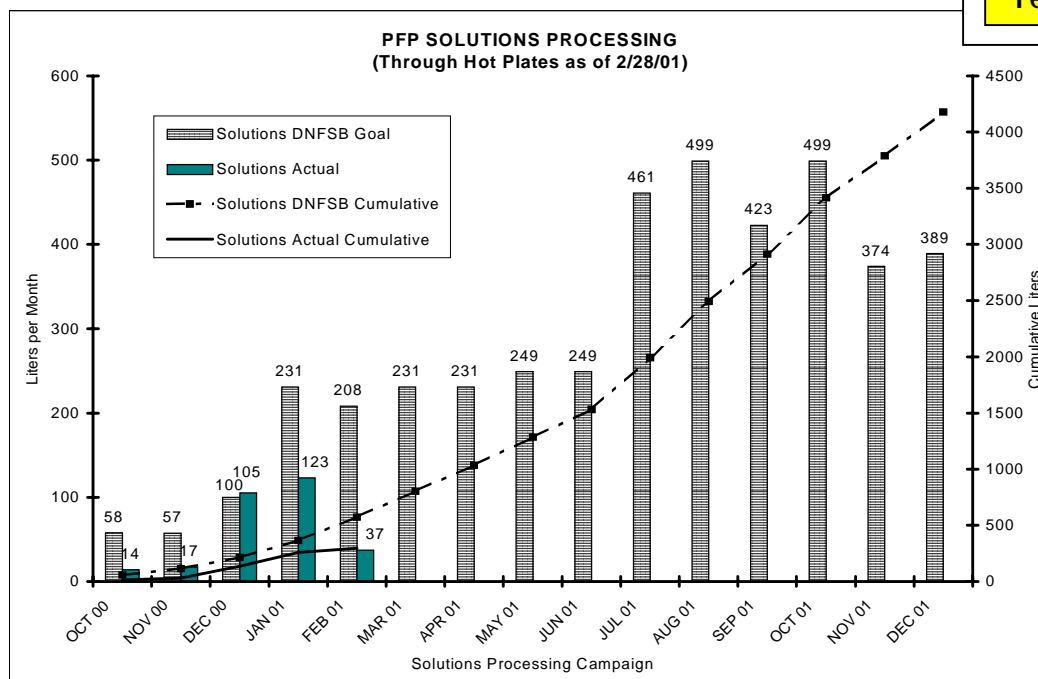
Yellow



Metals stabilization processing was impacted by higher-than-planned spontaneous oxidation of metal items (14 percent versus 10 percent). Inventory activities during February also impacted level of processing. Third shift implementation and weekend overtime have been implemented to recover schedule.

Solution Stabilization

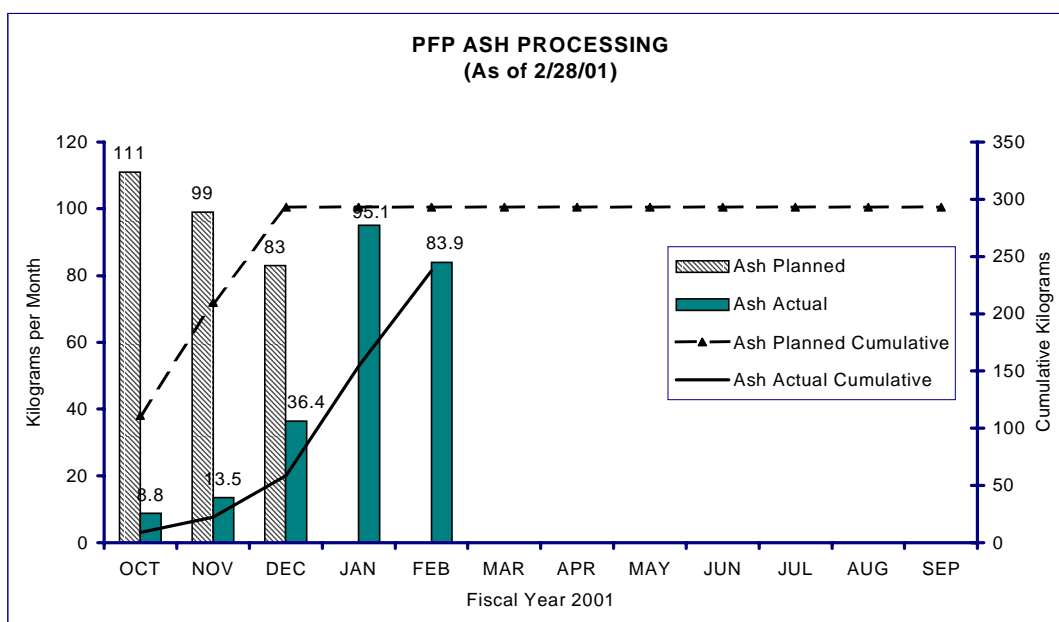
Yellow



This graph represents progress toward completion of the Defense Nuclear Facilities Safety Board milestone that is due December 31, 2001. The behind schedule status is due to the quantity of the boats generated per liter of solution from the precipitation process being significantly higher than forecasted in the baseline estimates.

Residues Stabilization

Green



Packaging of RF ash was completed March 19, 2001. Final shipment of the packaged ash to the Central Waste Complex (CWC), which completes this milestone, is currently scheduled for April 3, 2001.

FY 2001 SCHEDULE / COST PERFORMANCE – ALL FUND TYPES CUMULATIVE TO DATE STATUS – (\$000)

Yellow

		FYTD								
By PBS		BCWS	BCWP	ACWP	SV	%	CV	%	PEM	EAC
WBS 1.4.5 PFP										
PBS TP05 Deactivation		\$ 44,429	\$ 40,999	\$ 42,019	\$ (3,431)	-8%	\$ (1,021)	-2%	\$ 109,493	\$ 105,100
Total		\$ 44,429	\$ 40,999	\$ 42,019	\$ (3,431)	-8%	\$ (1,021)	-2%	\$ 109,493	\$ 105,100

Authorized baseline as per the Integrated Planning Accountability, and Budget System (IPABS) – Project Execution Module (PEM).
Note: Above data includes RL contract for Steam.

FY TO DATE SCHEDULE / COST PERFORMANCE

The unfavorable schedule variance is attributable to continuing technical and operational challenges in the Metals and Solutions Stabilization projects. The unfavorable cost variance is primarily attributable to RL holdbacks for steam, laundry, and Interoffice Work Orders to the Savannah River Site in support of Project W-460.

For all active sub-PBSs and TTPs associated with the Operations/Field Office, Fiscal Year to Date (FYTD) Cost and Schedule variances exceeding + / - 10 percent or one million dollars require submission of narratives to explain the variance.

Schedule Variance Analysis: (-\$3.4M)

1.4.5.1.10 Maintain Safe & Secure SNM (-\$291K)

Description and Cause: The unfavorable schedule variance is primarily due to delays in obtaining engineering and procurement resources to support the emergent Remote Material Surveillance System (RMSS) workscope.

Impact: No impact at this time. Despite the delayed start, this project is expected to be completed as scheduled in June 20001.

Corrective Action: None required.

1.4.5.1.11 Maintain Safe & Compliant PFP (-\$592K)

Description and Cause: The unfavorable variance is attributable to delays in starting special projects due to the reassignment of engineering and planning resources to support higher priority Project W-460 workscope.

Impact: No impact at the present time. Despite the delayed start, the planned special projects are forecast to be completed as scheduled. (i.e. 2736-ZB air conditioning, parking lot upgrades).

Corrective Action: None. Despite the delayed start, these special projects are expected to be completed this fiscal year as critical Project W-460 activities complete.

1.4.5.1.13 Stabilization of Nuclear Material (-\$780K)

Description and Cause: The unfavorable variance is primarily attributable to continuing technical and operational challenges in the Metals and Solutions Stabilization projects. Higher than planned (14% versus 10%) oxidation rates and operational reliability of the Bagless Transfer System have impacted metal stabilization. Although numerous process improvements are underway, delays in solution stabilization progress continues to be impacted by generation of higher than planned precipitate generated per liter of solution through the $Mg(OH)_2$ process. Also contributing to this variance were early operational issues in the Residues Packaging project.

Impact: The original March 31, 2001 milestone for completion of metal repackaging is in jeopardy. However, the new DNFSB Recommendation 2000-1 Implementation Plan, approved January 2001, has revised this milestone completion date to August 31, 2001, to reflect the staggered due dates based on current receipt and start up of the Outer Can Welder. The DNFSB milestone (TRP-01-500) to complete solutions stabilization by December 31, 2001, is forecast to be 3 months behind schedule. Although Residues Packaging is significantly behind schedule to the original December 2000 target date, the April 30, 2001 Tri-Party Agreement Milestone (M-083-07) commitment will be met.

Corrective Action: A dedicated third shift (graveyard) was implemented in February 2001 to increase metals processing throughput. Additional process improvements are expected to increase the solutions stabilization processing throughput. While a Baseline Change Request FSP-2001-014 has been implemented into the baseline that extends the Solutions Processing completion date to March 31, 2002, the DNFSB Recommendation 2001 milestone date remains unchanged. Additionally, a second Baseline Change Request (BCR) FSP-2001-041, "Rebaseline Prototype Vertical Denitration Calciner" is being developed to remove the currently unsupported Vertical Denitration Calciner testing from the baseline and redirects these resources to other critical solutions activities. Second shift Residues Packaging operations were implemented in January 2001 that have been instrumental in increasing processing throughput to support the Tri Party Agreement milestone.

1.4.5.1.14 Disposition of Nuclear Material (-\$1,721K)

Description and Cause: The unfavorable schedule variance is primarily due to delays in receiving Project W-460 stabilization and laboratory equipment that has impacted 2736-ZB Bagless Transfer System construction. Shipments of packaged Rocky Flats ash to the Central Waste Complex and stabilization of alloys are also behind schedule.

Impact: No impact is currently forecast for completion of Project W-460 or Rocky Flats residue packaging. If approved, Baseline Change Request FSP-2001-024 will remove from the FY 2001 baseline approximately 40% of the planned alloy disposition to FY 2003.

Corrective Action: The construction portion of Project W-460 has been awarded to Apollo Construction Inc. to minimize and recover the schedule slippage. Completion of Residue packaging is currently forecast to be completed in advance of the April 30, 2001 Tri Party Agreement (TPA) milestone. Baseline Change Request FSP-2001-024 has been submitted to DOE-RL for approval that reclassifies the remaining portion of the alloys into two groups of residues that will be thermally stabilized or packaged into Pipe Overpack Containers (POCs).

Cost Variance Analysis: (-\$1.0K)

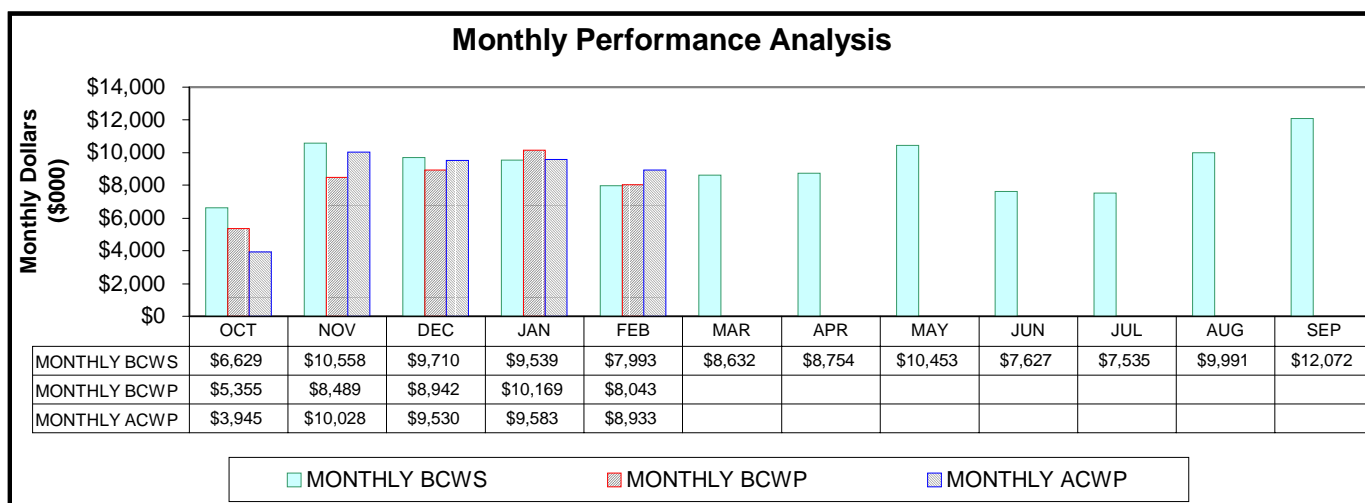
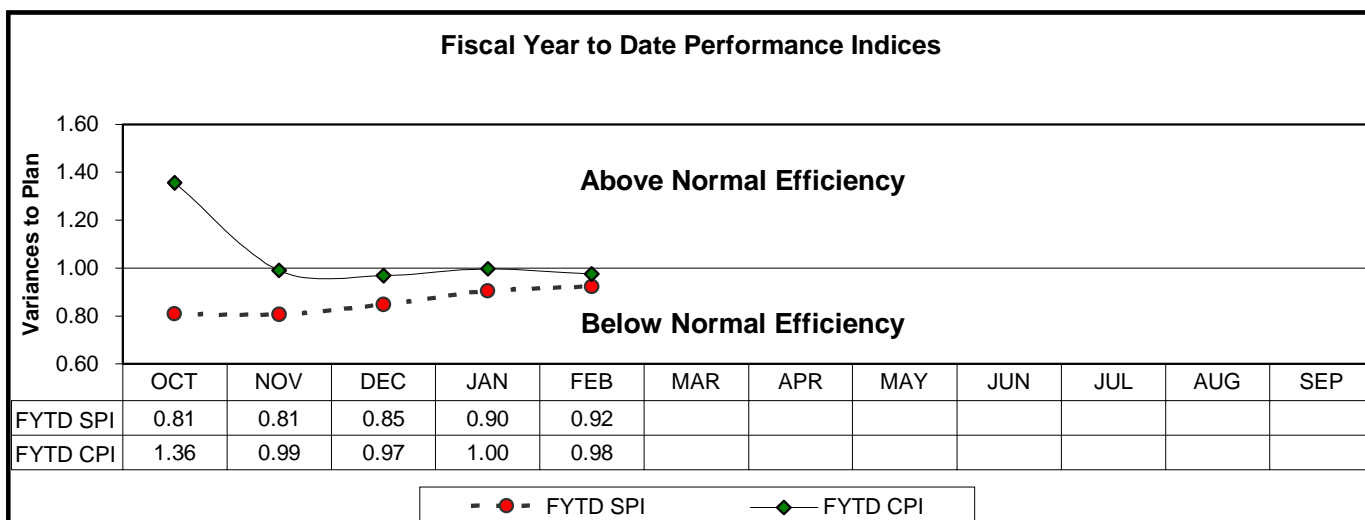
PFP Deactivation — 1.4.5/TP05

Description and Cause: The unfavorable cost variance is primarily attributable to RL holdbacks for steam, laundry, and Interoffice Work Orders to the Savannah River Site in support of Project W-460. The actual Project variance of \$400K is within the authorized baseline reporting threshold.

Impact: No impact projected.

Corrective Action: None Required.

SCHEDULE / COST PERFORMANCE (MONTHLY AND FYTD)



FUNDS MANAGEMENT FUNDS VS SPENDING FORECAST (\$000) FY 2001 TO DATE

Green

			Project Completion *			Post 2006 *			Line Items *		
			Funds	FYSF	Variance	Funds	FYSF	Variance	Funds	FYSF	Variance
The Plateau											
1.4.5	Nuclear Materials Stabilization										
	TP05										
	Operating										
	Line Item										
			\$ 90,383	\$ 95,918	\$ (5,535)						
Total Nuclear Mat. Stab. Operating			\$ 90,383	\$ 95,918	\$ (5,535)				\$ 12,140	\$ 12,140	\$ -
Total Nuclear Mat. Stab. Line Item									\$ 12,140	\$ 12,140	\$ -

* Control Point

ISSUES

Technical Issues

Issue: The quantity of boats from the precipitation process is higher than expected or forecasted in the baseline estimates and schedules

Impact(s): Extends project completion date three months beyond the original Defense Nuclear Facilities Safety Board 94-1/2001-1 commitment of December 31, 2001.

Corrective Action(s): Processing estimates and production schedules have been revised based on results of the characterization-processing task. Options currently under consideration to improve throughput include; increased lag storage, additional processing capability (two-boat hot plates) and discussions with WIPP and WRAP officials regarding alternate stabilization and disposition options.

Issue: A portion of the oxides to be processed contains fairly high levels of chloride.

Impact(s): Could impact completion of oxide stabilization.

Corrective Action(s): A meeting was held with PNNL to select the characterization and material pretreatment methods to remove chlorides prior to processing. A draft report from PNNL was received the end of January. Further work is underway to develop detailed plans and schedules. *(No further status to be provided)*

Regulatory, External, and Doe Issues and DOE Requests

Issue: No other issues identified at this time.

Impacts: None at this time.

Corrective Action: None at this time.

BASELINE CHANGE REQUESTS CURRENTLY IN PROCESS (\$000)

PROJECT CHANGE NUMBER	DATE ORIGINAL	BASELINE CHANGE REQUEST TITLE	FY 01 COST IMPACT (\$000s)	S C H	T E C H	DATE TO FHI CCB	CCB APR'VD	RL APR'VD
FSP-2001-014	29-Nov-00	Extend Solutions Campaign	<\$407>	X	X	11-Dec-00	19-Dec-00	Withdrawn
FSP-2001-021	13-Dec-00	Additional Cost Savings	<\$1672>			29-Dec-00	10-Jan-01	In Process
FSP-2001-024	08-Jan-01	Rebaseline Alloys Stabilization	\$86	X	X	08-Mar-01		In Process
FSP-2001-037	09-Feb-01	Accelerate Hanford Ash		X	X			
FSP-2001-038	09-Feb-01	Maintenance Calendar Restructure		X				
FSP-2001-040	22-Feb-01	Travel/Corrective Action Mgmt. Savings	<\$163>			08-Mar-01		N/A
FSP-2001-41	09-Feb-01	Rebaseline Prototype Vertical Dentrification Calciner (VDC)		X	X			
FSP-2001-42	01-Mar-01	Phase 1 Implementation - Nuclear Safety Requirements	\$132	X	X			
ADVANCED WORK AUTHORIZATIONS								
AWA-01-005		291-Z Stack Monitor	\$100	X	X	12-Feb-01	15-Feb-01	15-Feb-01

KEY INTEGRATION ACTIVITIES

- Completed the Acceptance Test Procedure (ATP) of the 2736-ZB Outer Can Welder (OCW) at the Savannah River Site on February 23. The OCW was delivered to the NMSP on March 2 and will undergo further testing prior to the projected April 9 startup.
- Techniques for improving the precipitate processing are being worked jointly by staff members of the Plutonium Process Support Laboratories and Pacific Northwest National Laboratory. A meeting was held with Pacific Northwest National Laboratory (PNNL) to select the characterization and material pretreatment methods to remove chlorides prior to processing. A draft report from PNNL was received the end of January. Further work is underway to develop detailed plans and schedules. *(No further status to be provided)*
- Coordinating with Lawrence Livermore National Laboratory (LLNL) to ship requested oxide material (81 kg.) this spring to that facility at no cost to the PFP. *(No further status to be provided)*
- Room modifications are underway in the 2736-ZB facility to accommodate delivery and installation of a new neutron counter from the Los Alamos National Laboratory. This equipment will be tested in the May-June timeframe jointly with the International Atomic Energy Agency (IAEA) and is expected to improve Nondestructive Analysis efficiency that will shorten the time for IAEA inventory verification requirements.